

FIG. 1A

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aagcgccggtctgcagtcggagacttcgagcagcaaacacggtgcgaacgaaccggagggggagagagaaatcaaacagctaagcgt 90
ggagcagacggcctgggaccagaaggggatcgatcgaggagcgcaataataacaataataaccacttcggagcaaacagcatat 180
aaagagctgcgacccaactgcagcctaaaaaatcaaacctgctcatgcacc 232

      10      20      30
M V V Q T R F P S W I I L C Y I W L L G F A H T G E A Q A A
ATGTTGTTCAAACTCGGTTCCTTCGTGGATTATTTGTGTACATCTGGCTTGGCTTTGCACACACGGGGAGGCGCAGGCTGCG 322
      40      50      60
K E V L L L D S K A Q Q T E L E W I S S P P S G W E E I S G
AAGGAAGTACTATTACTGGACTCGAAAGCACAACAAACAGAATTGGAATGGATTCTCTCCACCCAGTGGGTGGGAAGAAATTAGTGGT 412
      70      80      90
L D E N Y T P I R T Y Q V Q V M E P N Q N N W L R T N W :
TTGATGAGAACCTACCTCCGATAAGAACATACCAGGTGTGCCAGGTGATGGAGCCCAACCAGAACAACTGGCTGCGGACTAACTGGATT 502
      100     110     120
S K G N A Q R I F V E L K F T L R D C N S L P G V L G T C K
TCTAAAGGCAACGCACAAAGGATTTTGTAGAATTGAAATTCACCTTGAGGGATTGTAATAGTCTTCCGGAGTCTCGGGAACCTGCAAG 592
      130     140     150
E T F N L Y Y Y E T D Y D T G R N I R E N L Y V K I D T I A
GAAACGTTAATTTGTACTATTATGAACAGACTACGACCCGGCAGGAATATACGAGAAAACCTTTATGTTAAATAGACACCATTTGCT 682
      160     170     180
A D E S F T Q G D L G E R K M K L N T E V R E I G P L S K E
GCAGATGAAAGTTTCACACAAGGTGACCTTGGTGAAGAAAGATGAAGCTGAACACTGAGGTGAGAGAGATTGGACCTTTGTCCAAAAAG 772
      190     200     210
G F Y L A F Q D V G A C I A L V S V K V Y Y K K C W T I V E
GGATTCTATCTTGCTTTTCAGGATGTAGGGGCTTGCATAGCATTTGTTCTGTCAAAGTGACTACAAGAAGTGCTGGACCATTTGTTGAG 862
      220     230     240
N L A V F P D T V T G S E F S S L V E V R G T C V S S A E E
AACTTAGCTGTCTTCCAGATACAGTACTGGTTCGGAATTTTCTCTTAGTCGAGGTCCGTGGGACATGTGTGAGCAGTGCCGAGGAA 952
      250     260     270
E A E N S P R M H C S A E G E W L V P I G K C I C K A G Y Q
GAGGCAGAAAATTCGCCAGATGCATTGCAGTGCAGAAGGAGAGTGGCTAGTACCCATTGGAAAATGCATCTGCAAGCAGGCTATCAG 1042
      280     290     300
Q K G D T C E P C G R R F Y K S S S Q D L Q C S R C P T H S
CAAAAGGGGACACTTGCGAACCTGTGGCCGAGTTCTACAATCTTCTCTCAGGATCTCCAGTGTCTCGTTGTCCAACCCACAGC 1132
      310     320     330
F S D R E G S S R C E C E D G Y Y R A P S D P P Y V A C T R
TTCTCTGACCGAGAAGGATCATCCAGGTGTGAATGTGAAGATGGGTACTACAGAGCTCCTTCTGATCCACCATACGTTGCATGCACAGG 1222
      340     350     360
P P S A P Q N L I F N I N Q T T V S L E W S P P A D N G G R
CCTCCCTCTGCACCACAGAACCTTATTTCAATATCAATCAACAGCTGTAAGTTGGAATGGAGTCTCCGGCTGACAACGGGGGAAGA 1312
      370     380     390
N D V T Y R I L C K R C S W E Q G E C V P C G S N I G Y M P
AACGATGTCACTACAGAATACTGTGTAAGCGGTGCAGTTGGGAACAGGAGAATGTGTGCCATGCGGAAGTAACATTGGATACATGCCC 1402
      400     410     420
Q Q T G L E D N Y V T V M D L L A E A N Y T F E V E A V N G
CAGCAGACGGGATTAGAGGATAACTATGTCACTGTGACCTACTTGCCCATGCAAATTACACTTTTGAAGTTGAAGCTGTAATGGA 1492
      430     440     450
V S D L S R S Q R L F A A V S I T T G Q A A P S Q V S G V M
GTTTCGGACTTAAGCAGATCCAGAGGCTCTTCGCTGCTGTAGCATACCACCGGTCAAGCAGCTCCCTCGCAAGTGAGTGGAGTCATG 1582
      460     470     480
K E R V L Q R S V Q L S W Q E P E E P N G V I T E Y E I K Y
AAGGAGCGAGTACTGCAGCGAGTGTGCAGCTTCTTGGCAGGAGCCGAGCATCCAATGGAGTCATCACGGAATATGAAATCAAGTAT 1672
      490     500     510
Y E K D Q R E R T Y S T L K T K S T S A S I N N L K P G T V
TATGAGAAAGATCAACGGGAAAGGACGTACTCAACACTCAAAACCAAGTCCACCTCCGCTCCATTAATAATCTGAAACCGGGAACAGTG 1762
      520     530     540
Y V F Q I R A V T A A G T G N Y S P R L D V A T L E E A S G
TACGTCTTTTCAGATCCGGCGGTCACTGCTGCCGGTATGGAACCTACAGCCCTAGGCTTGATGTTGCCACACTTGAGGAAGCTTCAAGT 1852

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FIG. 1B

550 560 570
K M F E A T A V S S E Q N P V I I A V V A V A G T I I V
AAAATGTTGAAGCGACAGCAGTCTCCAGTGAACAGAATCCTGTCAATCAATTGCTGTAGTGGCTGTAGCAGGGACCATCATCTTGGTG 1942

580 590 600
F M V F G F I I G R R H C G Y S K A D Q E G D E E L Y F H F
TTGATGGTGTTCGGCTTCATCATTGGAAGAAGGCACTGTGGTTATAGCAAGGCTGACCAAGAAGGGGATGAAGAACTCTACTTTCATTTT 2032

610 620 630
K F P G T K T Y I D P E T Y E D P N R A V H Q F A K E L D A
AAATTTCCAGGCACCAAAACCTACATTGACCCTGAAACCTATGAGGACCAAAATAGAGCTGTCCATCAATTCGCCAAGGAGCTAGATGCC 2122

640 650 660
S C I K I E R V I G A G E F G E V C S G R L K L P G Q R D V
TCCTGTATTAATAATTGAGCGTGTGATTGGTGCAGGAGAATTTGGAGAAGTTTGAGTGGTGGTTGAACTTCGGGGCCAGAGAGATGTT 2212

670 680 690
A V A I K T L K V G Y T E K Q R R D F L C E A S I M G Q F D
GCAGTGGCCATAAAACCTGAAAGTTGGTTACACAGAAAAGCAAAGGAGGACTTTTTATGCGAAGCAAGCATCATGGGCAATTTGAC 2302

700 710 720
H P N V V H L E G V V T R G K P V M I V I E F M E N G A L D
CACCAAAATGTCCTCATTGGAAGGGGTTGTTACAAGAGGGAAGCCTGTGATGTTGTAGAGTTTCATGGAGAATGGAGCCCTGGAT 2392

730 740 750
A F L R K H D G Q F T V I Q L V G M L R G I A A G M R Y L A
GCATTTCTCAGGAAACACGATGGGCGAGTTTACAGTCATTGAGTGGTATGTTGAGAGGTATTGCCGCTGCCATCGGATACTTGGCT 2482

760 770 780
D M G Y V H R D L A A R N I L V N S N L V C K V S D F G L S
GATATGGGATACGTTACAGGGACCTTGACGCGCAACATCCTTGTCACAGCAATCTGTTGTAAAGTGCAGATTTTGGCCTTTCC 2572

790 800 810
R V I E D D P E A V Y T T T G G K I P V R W T A P E A I Q Y
CGGGTTATAGAGGATGATCCCGAAGCTGTCTACACCAGCACTGGTGGAAAAATTCAGTAAGGTGGACTGCACCGGAAGCCATTCAATAC 2662

820 830 840
R K F T S A S D V W S Y G I V M W E V M S Y G E R P Y W D M
CGGAAGTTACCTCAGCCAGCATGTGTGGAGCTATGGGATTGTCATGTGGGAAGTGTGCTTATGGAGAAAGACCTTACTGGGACATG 2752

850 860 870
S N Q D V I K A I E E G Y R L P A P M D C P A G L H Q L M L
TCAAATCAAGATGTCATTAAGCGATAGAAGAAGTTATCGTTTGCCGGCGCCATGGATTGCCAGCTGGTCTTACCAGCTAATGCTG 2842

880 890 900
D C W Q K D R A E R P K P E Q I V G I L D K M I R N R S S L
GATTGTTGGCAGAAAGATCGGGCGGAAAGGCAAAAGTTTGAGCAGATAGTCGGAATTCAGACAAAATGATTCGAAACCAAGTAGTCTG 2932

910 920 930
K T P L G T C S R P L S P L L D Q S T P D F T A F C S V G E
AAAACACCCCTGGGAACCTGTAGTAGACCTTAAGCCCTCTTGAGACCAGAGCACTCTGACTTCACTGCCTTCTGTTCAAGTTGGAGAA 3022

940 950 960
W L Q A I K M E R Y K D N F T A A G Y N S L E S V A R M T I
TGTTGCAAGCTATTAAATGGAAGGTATAAGGACAACCTCACAGCAGCGGGTTACAACCTCACTCGAGTCAGTGGCCAGGATGACTATC 3112

970 980 990
D D V M S L G I T L V G E Q K K I M S S I Q T M R A Q M L H
GATGATGTGATGAGTTAGGGATCACACTGGTTGGCCATCAAAAGAAGATCATGAGCAGCATCCAGACTATGCGGGCACAATGTTGCAT 3202

L H G T G I Q V *
TTACACGGAACAGGCATCCAAGTGTA 3229

cacatcgccctccctcagatgaggcttaagactgcaggagaacagttcttgccttcagtatacgcatagaatgctgctagaagacagttg 3319
atatactgggtccttcctacaagaagagaagattttagaagcactccagacttgactcctaagtccaccagaatatacaaaaaggg 3409
aatatagatccaccactggtggcaggagaacacagagagacaataaacaagactactctgaaaacatcccaacaccttgagctctcg 3499
aacctcctttttatcttatagactttttaaaatgtacataaagaatttaagaagaatataatttgtaaaataaatcatgatcttatt 3589
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gttaaatcaatgaaatattttccttaaaatattgtatttcagactattctttccagaaccatctgtgtttattctgcttaaggacttt 3679
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ttgtaaaaatcagataaactataacttttcaatgaaaaaaaaaaaaaagaagcaataatgatccataaatactataaggcacttttaa 4039
cagattgtttatagagtgtttactaggcagaatttaataaaaaaaagagagatgtcaatttttaggtttatgtgtatatgataaaag 4129
gctgagcttctgtcgaagatgctggtgaaagcaagactggaagcgaagctctccagctttggctaaccatccgagcacatcaagagct 4219
tcagctctgtgacagtaagaatttaggaacatagttgacctatattttgtattcttctgttgtaatgcagtcctcaataacaaaa 4304

FIG. 2A

MDK1'-T1

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570          580          590
V A V A G T I I L V F M V F G F I I G R R H C G Y S K A D Q
GTGGCTGTAGCAGGACCATCATCTTGGTGTTCATGGTTCGGCTTCATCATTTGGAGAAGGCACCTGTGGTTATAGCAAGGCTGACCAA 2002

600
E G D E E L Y F H S L V T N E H L S V L *
GAAGGGGATGAAGAACTCTACTTTCATTCTTTAGTAAACAATGAGCACCTGTCAGTTTTTAAaccgcaacaataactgtttaagacaat 2092

caatttggataaacaatcaactacagcagataaatacaagatttttaagtccttttccctttatcacattctgcttatttggtttat 2182
atgtttatttttaaaactctgatcttgattgaatgtgataccataagcacagttaggctgcagtgtaaaatatataaagacattgttctga 2272
gagcagtcgatttcataggaaagattgtttgggtcttgtaaataataaagaatttttaaggatatagtgtaatttcttctcattgc 2362
attaataaaccataatgcctacctatctttgtgtcttgaaaccaaatagaatagatttggaaatactttatttgaattgaattgatataaag 2452
ttgactgagcatttatgtgttacctgatgcttctgggtgcattgaataattttaacttttaaaatgatactatgtgtttccaatttga 2542
ctaccttttgaggcatactggtaacctcctctattagctaagatcttccaaagccttataatgaaaagttatataaaccatttctc 2632
tttcaaatcactgcatacttggtaaggatcccaggaaattgtaaattttctaaatttactctgcaatttgatatccagcctctatta 2722
ccctcaagggtgaataataaaactatgtcttttgaataatttctctttgtgattgtagcagtcctcatatcttctgactaattttatgta 2812
tatgtcaacagtggttggtcttttaaaataaatacaagaataagtaaaaaaaaaaaaaaaaaaaaaataaaaaaaaaaaaaaa 2901
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FIG. 2B

MDK1-T2

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                    570          580          590
V A V A G T I I L V F F G F I I G R R H C G Y S K A D Q
GTGGCTGTAGCAGGGACCATCATCTTGGTGTTCATGGTGTTCATCATTGGAAGAAGGCACCTGTTATAGCAAGGCTGACCAA 2002
                    600          610          620
E G D E E L Y F H S L Y R E R G D G M E K T Q H N K K M I
GAAGGGATGAAGAAGCTCTACTTTCATTCTCTCTTACAGGGAAAGGGGAGACGGGATGGAAAAGACACAGCACATAAGAAGTGGATGAT 2092
A S C S R L *
GCAICGTGCTCTCGTTTGTAGgtctcttttctctaatacaactatgattttgaagtacgcgtacacgaagcaaacgggaagagataagga 2182
attagcatttgtgaacctgactgtaatcctctcttcgcggaagagatgagatgctattgcatgagaatgtacaacttgacacttgaaatc 2272
ttttttgataaattagtgctcaggggggggggggaagtagagaaagcaaa 2323
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FIG. 2C

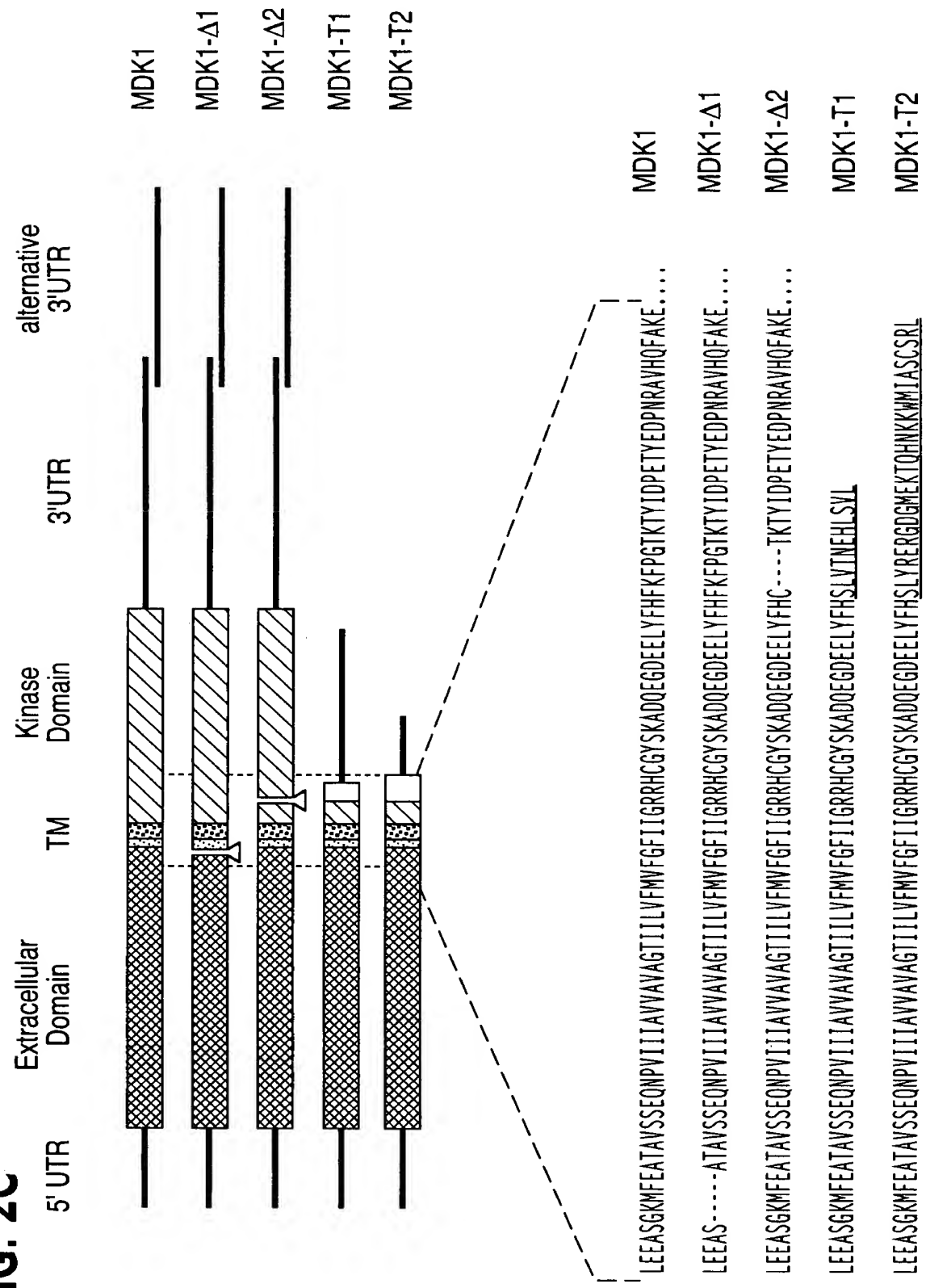


FIG. 3

